JOURNAL OF RESEARCH of the National Bureau of Standards—B. Mathematical Sciences
Vol. 75B, Nos. 3 and 4, July–December, 1971

INDEX TO VOLUME 75B

July–December 1971

A

Page

Analytic functions 85
Angular velocity 165
Approximation 85

B

Bhat, V. N., Kapoor, S. F., The powers of a connected graph are highly hamiltonian 63
Biorthogonal polynomials 1
Block design 23
Boundary value problems 121
Bounded index 141
Bounds to truncation errors in biorthogonal polynomial approximations, with illustrative applications to gamma ray transport distributions 1

C

Casimir check for the algebraic matrices of the configuration $(d+s)^n p$ 31
Casimir operator 31
Chain rule 97
Checking parameters 31
Combinatorial analysis 31
Commutator 17
Conditions for convergence of solutions 173
Configurations 23
Congruences 67
Contimuum mechanics 97
Convex functions 47
Convex homotopy 47
Convex sets 47
Coupled equations 121

D

$(d+s)^n p$ 31
Determinant 107
Differential equations 121

E

Effective axis and angle of rotation 165
Eigenvalues of products 115
Eigenvalues of sums 115
Eigenvalues of sums of hermitian matrices. III 115
Entire function 141
Ergodic source which is not a function of any finite Markov process 133
Error functions 149
Exact solutions 67
Exact solutions of linear equations with rational coefficients 67
Exponential type 141

F

Fischer inequality 77
Fong, J. T., Some elementary formulas in "matrix calculus" and their applications 79
Fraenkel, A. S., Loewenthal, D., Exact solutions of linear equations with rational coefficients 67

G

Page

Gamma ray transport 1
Garbanti, Linda Freede, Thompson, Robert C., Eigenvalues of sums of hermitian matrices. III 115
Geist, Jon, A new type of boundary value coupling for second order Sturm-Liouville systems 121
Geller, Murray, Ng, Edward W., A table of the integrals of the error function. II. Additions and corrections 149
Gelman, Harry, A note on the time dependence of the effective axis and angle of a rotation 165
Generalized matrix function 107
Gradient 79
Graph 63
Gaussian quadrature 85

H

Haber, S., On certain optimal quadrature formulas 85
Hadamard determinant theorem 77
Hamiltonian 63
Homotopy 47
Horn, W. A., Convex homotopy 47

I

Improvement of the Fischer inequality 77
Indefinite integrals 149
Inequalities for eigenvalues 115
Information theory 133
Integral equation of first kind 173
Integration 85
Intrinsic vector 165
Invariant factors 81
Invariants 107

J

Johnsen, E. C., Storer, T. F., A special permutation matrix decomposition for combinatorial design incidence matrices 23

K

Kapoor, S. F., Bhat, V. N., The powers of connected graph are highly hamiltonian 63
Kinematics of a rigid body 165
Konig's theorem 23

L

Linear equations 67
Linear transformations on matrices 107
Loewenthal, D., Fraenkel, A. S., Exact solutions of linear equations with rational coefficients 67

M

Marcus, Marvin, Linear transformations on matrices 107
Markov process 133
Matrices 23, 79, 107
0,1 Matrices 23
Matrix 17
Matrix calculus 79

Page

Matrix equations 23
Maximum modulus 141
Mazur, Jacob, A numerical solution of integral equation of the first kind applied to slit correction in small-angle x-ray scattering..... 173
Merris, R., An improvement of the Fischer inequality 77
Modular arithmetic 67
Moment method 1

N

Neutron transport 1
Newman, M., On the Smith normal form 81
New type of boundary value coupling for second order Sturm-Liouville systems 121
Ng, Edward W., Geller, Murray, A table of the integrals of the error function. Additions and corrections 149
Note on the time dependence of the effective axis and angle of a rotation 165
Numerical solution of integral equation of the first kind applied to slit correction in small-angle x-ray scattering 173

O

On certain optimal quadrature formulas 85
On entire functions of exponential type 141
Orthogonal 17

P

Partial differentiation 79
Permanent 77
Permutation matrix decomposition 23
Polynomial truncation errors 1
Positive definite hermitian matrix 77
Power of a graph 63
Powers of a connected graph are highly hamiltonian 63
Principal ideal rings 81
Probability theory 133
Product rule 79

Q

Quadrature 85

R

Rank 107
Ring theory 133

Page

Rotation group 165
Roth, C., The Casimir check for the algebraic matrices of the configuration $(d+s)^n p$ 31

S

Self-adjoint equations 121
Shah, S. M., Sisarcick, W. C., On entire functions of exponential type 141
Shifting operators 173
Sievert function 1
Singular values 115
Sisarcick, W. C., Shah, S. M., On entire functions of exponential type 141
Skew-symmetric 17
Slit correction 173
Slit wieghting function 173
Small-angle x-ray scattering 173
Smith, J. M., A theorem on matrix commutators 17
Smith normal form 81
Some elementary formulas in "matrix calculus" and their applications 79
Spatial rotation 165
Special functions 149
Special permutation matrix decomposition for combinatorial design incidence matrices 23
Spencer, L. V., Bounds to truncation errors in biorthogonal polynomial approximations, with illustrative applications to gamma ray transport distribution 1
Stochastic process 133
Storer, T. F., Johnsen, E. C., A special permutation matrix decomposition for combinatorial design incidence matrices 23
Strong numerical instability 173
Sturm-Liouville systems 121
SU_3 31

T

Table of integrals of the error function. II. Additions and corrections 149
Tensor function 79
Theorem on matrix commutators 17
Thompson, Robert C., Garbanti, Linda Freede, Eigenvalues of sums of hermitian matrices. III 115
Trace 79
Traub, R. D., An ergodic source which is not a function of any finite Markov process 133

U. S. GOVERNMENT PRINTING OFFICE : 1972 OL - 449-764